BATHMODON SEMICINCTUS. Cope. Sp. nov.

This species differs from the last in several particulars of dentition. The interior ridge (homologous with the inner crescentic) bounding the middle plane of the superior molars, is not continued on the posterior face of the tooth, but curving inwards joins the outer crest at its apex. The outer crest terminates in a conic tubercle anteriorly on the external face, the rudiment of the anterior crescentic ridge appearing as a low ridge from the side of the posterior one, and rising to a point on the anterior margin of the crown. There is no cingulum round the anterior base of the crown. The latter is as long as wide. The inner crest is reduced to a mere angle, and its posterior face is not basin-shaped but rises to the crest of the inner crescent. The outer face of the latter is sub-horizontal with rising apex, and is concave transversely. Its anterior outer base is narrowed but is less elevated than the posterior.

Measurements.	M.
Length basis crown	.0225
Width "	.022
" exterior crescent	.012
Depth " "	.02

This animal was not more than half the bulk of the last; its size was about that of the *Tapirus terrestris*. The differences in dentition which it presents are so marked as compared with the last species, as to induce me to believe that it will be found on fuller acquaintance to belong to another genus. This may be called *Loxolophodon*. Other remains belonging to these species, or relating to it in size, are contained in Dr. Hayden's collection, but cannot now be referred to with certainty.

From the Wahsatch Beds, near Evanston, Utah.

Especial interest attaches to these fossils from the fact that, they belong to the oldest of the tertiary periods of North America. The Wahsatch Group, according to Dr. Hayden, underlies the Bridger Group, which has yielded so many mammalian species to the researches of Leidy and Marsh. These have been supposed to be Eocene, so that the age and species here described is not later than that. The character presented by the molar teeth are very peculiar, and indicate not only a new genus, but a new family. This has a remote affinity only to the group of *Palæosyops Titanotherium, etc.*

ON TWO NEW ORNITHOSAURIANS FROM KANSAS.

BY EDWARD D. COPE.

(*Read before the American Philosophical Society, March* 1, 1872.)

The species about to be described resemble, in their large proportions, the large pterodactyles of the English chalk and green sand. The specimens at my disposal consist chiefly of portions of the anterior limb, of metacarpals and phalanges. Some of the phalanges of the claw-bearing digits are remarkable for their relatively large diameter, a peculiarity

stated by Seeley to be found in the species of his genus *Ornithochirus*. As it is not likely on other grounds that the species of the Niobrara cretaceous strata belong to the genus *Pterodactylus* of Cuvier, which is chiefly known from the Jurassic period, I place the Kansas species for the present in *Ornithochirus*, as established by Seeley.

ORNITHOCHIRUS UMBROSUS. Cope.

Represented by the distal portion (ten inches) of the wing finger metacarpal; the proximal portion (eight inches) of the first phalange of the same digit, with two phalanges of claw-bearing digits. The distal condyles of the first named bone are separated by the usual deep groove above and below, and wind separately to their terminations on the inferior face. The narrow base which supports the inner condyle is bounded posteriorly by an acute edge; directly outside of the base of this ridge is a deep groove or foramen, which is bounded next the external condyle by another ridge which rises to the base of the inner condyle on the trochlear side. The transverse diameter of the condyle is M. 0.043 or 17 lines.

The proximal end of the first phalange is perfect, but flattened by pressure. It presents the two usual cotyloid cavities well separated by an elevated ridge. Anteriorly, it presents an elevated crest for muscular insertion. This terminates abruptly, and is followed distally by a deep notch. Distal to this is another prominence of the bone also probably an insertion. Antero-posterior diameter (flattened), 24 lines.

The claw phalange is short and wide; both its articulations are simple and concave. Both outlines are keeled, one very strongly at one end, and at the other presenting beyond the articular surface, a wide prolonged process for muscular insertion. Length phalange without process, thirteen lines; process, four lines; diameter, widest extremity, eleven lines. This indicates a very stout digit. The other digit is penultimate, and is remarkable for its small size, perhaps indicating an external rudimental digit. It is only supposed to belong to the anterior limb, from its having been found with the preceding bones. It is more slender than the other, and differs in having convex distal articulation, divided by a trochlear groove, and the concave proximal one in like manner divided by a trochlear carina. Length, nine lines; proximal depth, three lines.

This species is the largest Pterodactyle as yet known found on our continent, the end of the wing metacarpal exceeding in diameter that of the species described by Professor Marsh, from the same region, by 4. lines.

From near Butte Creek, from the yellow chalk.

ORNITHOCHIRUS HARPYIA. Cope.

Established on wing metacarpals and phalanges of three individuals. The articular extremities indicate a species from one-half to two-thirds the size of the last named. Those of the metacarpal are very prominent above as well as below, and there is no distinct ridge in the trochlear groove between them. The inner condyle does not stand on a base with an acute posterior ridge, but overhangs a rather obtusely-edged support.

There is no second ridge on the outer (trochlear) side of it. The same condyle terminates abruptly posteriorly on the superior face of the shaft. Width of condyles in No. 1, eleven lines; in No. 2, thirteen lines; vertical diameter, inner condyle, eleven lines (No. 1); transverse diameter shaft above, eight lines.

The proximal articular surfaces of the proximal wing phalanges are deeply concave, the inner protected by an elevated margin behind; that of the outer, much lower. They are separated chiefly by a deep emargination, but on their short adjacent portions by a low ridge. The process for ligamentous insertion is well developed. The distal extremity is slightly widened, and its articular surface is wedge shaped with very convex base. Its surface is slightly concave in both directions and without median ridge. The margin of the shaft terminates in a short tuberosity bearing articular surface. Transverse diameter, sixteen lines. Length of shaft preserved, but incomplete, nine inches, one line.

This species is about the size of the Pterodactyle found by Professor Marsh in the same region,* and probably belongs to the same genus, and possibly to the same species. This, however, cannot be definitely ascertained as his species is imperfectly described, all the characters adduced except the measurement being generic. The name given by Professor Marsh has also been previously used, both in this genus and in *Pterodactylus*, and must therefore be given up.

Remains of the two *Ornithochiri* above described are not rare in the yellow chalk of the Niobrara Group, and those obtained were mostly from different parts of the course of the bluffs of Butte Creek.

A DESCRIPTION OF THE GENUS PROTOSTEGA, A FORM OF EXTINCT TESTUDINATA.

By Edward D. Cope.

(*Read before the American Philosophical Society, March 1st*, 1872.)

The present article introduces to the system a new form of Testudinata of a character not heretofore found in a fossil condition. Its affinities will be more fully discussed at the end of the description, but they appear to belong to the *Sphargididæ*. This family is represented, in our present knowledge, by but one genus and one species of the recent seas. It is one of the most generalized, or in special characters, the most aberrant of the order of the tortoises, and the discovery of an extinct ally, even as far down in the series as the cretaceous period, is not surprising.

The remains preserved belong to a single individual, and include many portions of the cranium, five vertebræ more or less incomplete, the scapular arches of both sides with the coracoid bones; both humeri perfect, with nine phalanges, ten ribs, one vertebral (?), and ten marginal bones; parts or wholes of four large lateral (?) dermal bones, with five distinct

*See Am. Jour. Sci. Arts, June, 1871.